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AMSAT NEWS SERVICE
ANS-251

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-251.01
ANS-251 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 251.01
>From AMSAT HQ SILVER SPRING, MD.
DATE September 8, 2013
To All RADIO AMATEURS
BID: $ANS-251.01

Mail your AMSAT-NA Board of Directors Ballots TODAY

A reminder that, if you haven't done so already, mail your Board of Director Ballots ASAP. All members in good standing should have received their ballots. In order for your ballott to be counted, it will need to be RECEIVED at the AMSAT office by September 15th.

This year we have 8 candidates for 4 voting Board members and 2 non-voting Alternates. Your vote is especially important this year in selecting those who will help guide AMSAT-NA. If you have not submitted your ballot, please review the candidate biography and position statements you received, as well as the Minutes of the Board Meeting published in the May/June issue of the AMSAT Journal. Then make your voice heard by voting.

[ANS thanks the AMSAT Office for the above information]

US Space Fence Shut Down

It is reported on SatWatch that the 216 MHz US Space Fence, used to detect orbital objects, was turned off on September 1, 2013 at 0000 UT.

The Air Force Space Surveillance System (AFSSS), known as the Space Fence, is a U.S. government multistatic radar system built to detect orbital objects passing over the United States. There are three transmitter sites operating on 216.983, 216.97 and 216.99 MHz and six receiving stations.

According to Wiki the system is understood to be capable of detecting a 10 cm object at an altitude of 30,000 km and makes 5 million satellite observations each month.

Early in August Space News reported that: Gen. William Shelton, commander of Air Force Space Command, “has directed that the Air Force Space Surveillance System be closed and all sites vacated” effective Oct. 1, the memo said.

It seems appear the closure may have occurred earlier than initially reported.

The reason for the shutdown has been reported as being because Federal Government expenditure is exceeding budget resulting in automatic budget cuts known as sequestration, however, a Space Review article suggests another reason
http://www.thespacereview.com/article/2357/1

Air Force Space Command (AFSPC) officials say they have devised modified operating modes for the Perimeter Acquisition Radar Characterization System at Cavalier Air Force Station, N.D., and for the space surveillance radar at Eglin Air Force Base, Fla., which allows the discontinuation of AFSSS operations while still maintaining solid space situational awareness.

Air Force Space Surveillance System
http://en.wikipedia.org/wiki/Air_Force_Space_Surveillance_System

Air Force Space Command to discontinue space surveillance system
http://www.af.mil/News/ArticleDisplay/tabid/223/Article/466832/air-force-space-command-to-discontinue-space-surveillance-system.aspx

Space News, August 6, 2013
http://www.spacenews.com/article/military-space/36655shelton-orders-shutdown-of-space-fence

SatWatch http://www.satwatch.org/

High Frequency Active Auroral Research Program (HAARP) shuts down
http://www.southgatearc.org/news/july2013/haarp_facility_shuts_down.htm

[ANS thanks AMSAT-UK for the above information]

Say HI to Juno

NASA’s Juno mission is inviting amateur radio operators around the world to transmit a coordinated message on the 28 MHz band to the Juno spacecraft.

NASA’s Juno spacecraft will fly past Earth on October 9, 2013 to receive a gravity assist from our planet, putting it on course for Jupiter.

To celebrate this event, the Juno mission is inviting amateur radio operators around the world to say “HI” to Juno in a coordinated Morse Code message. Juno’s radio and plasma wave experiment, called Waves, should be able to detect the message if enough people participate.

Juno will have a better chance of detecting the signal from many operators if the signal is spread out across the spectrum. The Juno Waves instrument is a broadband receiver, and the detector being used for this event has a band width of 1 MHz. It is better for detection of the signal to have a broadband signal coming in.

For this experiment, the Juno team would like to ask those participating to spread out in frequency across the 10 meter band. They have supplied a table of suggested frequencies between 28 and 29 MHz, based on the last letter of your call. When the HFR receiver is tuned to 28MHz, the center frequency is 28.5 MHz. A 50 kHz high pass filter limits low frequencies hitting the detector, so the frequency table excludes 28.5 MHz ±50 kHz. The natural signals the team expect to measure at Jupiter will consist of a large number of discrete tones, so spreading the signals out in this manner is a good approximation to the signals Juno is expected to detect. But at Jupiter, they don’t expect to be able to decode CW in the telemetry!

The 28 MHz band was chosen for this experiment for several reasons. The Waves instrument is sensitive to radio signals in all amateur bands below 40 MHz, but experience with the University of Iowa instruments on the Galileo and Cassini earth flybys shows significant shielding by the ionosphere at lower frequencies. As sad as it sounds, the team hope for lousy band conditions on October 9, so an appreciable fraction of the radiated energy escapes the ionosphere into space, and is not refracted back down to the ground somewhere else on the planet.

Juno’s antenna consists of a pair of tapered 2.8 meter long titanium tubes, deployed from the bottom deck of the spacecraft under the +X solar array and magnetometer boom. A high impedance radiation resistant preamp sits at the base of the antenna and buffers the signals from 50 Hz to 45 MHz. The elements are deployed with an opening angle of about 120 degrees. Ten meters is above the resonant frequency of the antenna and NEC analysis indicates a lobe generally along the spin axis of the spacecraft. This will be good for detection on the inbound part of closest approach to Earth.

The Waves instrument uses four receivers to cover the frequency range of 50 Hz to 41 MHz. Signals up to 3 MHz are bandpass filtered, sampled by A/D converters and FFT processed into spectra using a custom FFT processor developed by The University of Iowa under a grant from the Iowa Space Grant Consortium.

The Juno team point out that All transmissions must follow local and national regulations.

Please join in, and help spread the word to fellow amateur radio enthusiasts!

NASA – Say “HI” to Juno!
http://www.jpl.nasa.gov/hijuno/
See How do I participate ? for the frequency list.

[ANS thanks AMSAT-BB and Glenn AA5PK for the above information]

Space Station Slow Scan TV Active

Dmitry Pashkov UB4UAD has posted two images that he received on 145.800 MHz FM from the International Space Station (ISS) on Wednesday, September 4, 2013.

All you need to do to receive the SSTV pictures from the space station is to connected the audio output of a scanner or amateur rig via a simple interface to the soundcard on a Windows PC or an Apple iOS device, and tune in to 145.800 MHz FM. You can even receive pictures by holding an iPhone next to the radio’s loudspeaker.

The ISS puts out a strong signal on 145.800 MHz FM and a 2m handheld with a 1/4 wave antenna will be enough to receive it. The FM transmission uses 5 kHz deviation which is standard in much of the world.

Many FM rigs in the UK can be switched been wide and narrow deviation FM filters so select the wider deviation. Handhelds all seem to have a single wide filter fitted as standard.
On Windows PC’s the free application MMSSTV can be used to decode the signal, on Apple iOS devices you can use the SSTV app. The ISS Fan Club website will show you when the space station is in range.

For more on Slow Scan Television SSTV, see this article SSTV – The Basics.

How to be successful with the ISS Slow Scan Television (SSTV) imaging system
http://www.marexmg.org/fileshtml/howtoissstv.html

Information on the MAI-75 SSTV experiment
http://www.energia.ru/eng/iss/researches/education-26.html

IZ8BLY Vox Recoder, enables you to record the signals from the ISS on 145.800 MHz while you’re away at work
http://antoninoporcino.xoom.it/VoxRecorder/

For the latest status of amateur radio activity on the ISS and real time tracking see http://www.issfanclub.com/

ARISS Slow Scan TV (SSTV) Blog and Gallery
http://ariss-sstv.blogspot.co.uk/

[ANS thanks AMSAT-UK and for the above information]

FUNcube-1 is in its Pod

The AMSAT FUNcube team are delighted to be able to announce that the FUNcube-1 CubeSat has now completed all its final testing and been

placed into its launch POD.

ZACUBE-1 prior to being shipped to the Netherlands - Image credit CPUT
ZACUBE-1 prior to being shipped to the Netherlands – Image credit CPUT
This work was completed during a three day programme at the premises of ISIS BV in Delft in the Netherlands and was finished, on time, late Wednesday afternoon on September 4, 2013.

FUNcube-1 is actually the middle 1U CubeSat of three sharing a 3U ISIPOD. It is sharing the ISIPOD with ZACUBE-1 from South Africa and HiNCube from Norway.

ZACube-1, in addition to carrying VHF and UHF communications equipment also has a 20 metre beacon which will operate on 14.099 MHz This ISIPOD, with the spacecraft inside, will be transported to Russia, early next month, for launch and will eventually be attached directly to the launch vehicle.

FUNcube-1 carries a U/V linear transponder and the educational telemetry beacon using 1k2 BPSK for school outreach purposes.

The current launch info has lift off scheduled for November 21st at 07:11:29 UT

Full initial orbit details and TLE's, together with decoding software will be made available over the next few weeks.

FUNcube-1 communication subsystem:
• 400 mW Inverting linear transponder for SSB and CW
- Uplink 435.150 – 435.130 MHz
- Downlink 145.950 – 145.970 MHz
• 400 mW BPSK Telemetry 145.935 MHz

ZACUBE-1 http://tinyurl.com/ANS-251-ZACUBE-1

HiNCube http://www.hincube.com/

A recent presentation about the FUNcube project by Graham Shirville G3VZV and Wouter Weggelaar PA3WEG can be viewed online at http://www.batc.tv/streams/amsat1311 or downloaded from http://www.batc.tv/vod/Funcube1.flv

A PDF of the slides from that presentation is here FUNcube_Colloquium2013a

FUNcube information sheets:
• FUNcube_Project Information_aug2013
• FUNcube_Educational_Outreach aug2013

FUNcube-1 http://amsat-uk.org/funcube/funcube-cubesat/

FUNcube Yahoo Group http://amsat-uk.org/funcube/yahoo-group/

FUNcube website http://www.funcube.org.uk/

Some of the other satellites that may be on the same Dnepr launch vehicle are listed at http://amsat-uk.org/2013/08/22/dnepr-cubesat-launch/

AMSAT-UK on Facebook
https://www.facebook.com/pages/AMSAT-UK/208113275898396
AMSAT-UK on Twitter
https://twitter.com/AMSAT_UK

Join AMSAT-UK
http://shop.amsat.org.uk/shop/category_9/Join-Amsat-UK.html

[ANS thanks AMSAT-UK for the above information]

2013 AMSAT Symposium Tours Announced

AMSAT has arranged for two special tours as part of this year's Symposium.

Battleship USS Texas BB-35

On Sunday there will be a tour of the Battleship Texas BB-35, the only surviving US Navy warship that served in both World Wars. It is currently opened to the public while undergoing extensive restoration to ready her for the 100th anniversary of her commissioning in 2014. A special tour has been arranged for AMSAT Symposium participants. Transportation will depart the Marriott at 1030, and the formal tour will be completed at 1400. Transportation will be available directly to Houston Hobby airport from the ship. There will be an optional lunch at a popular local restaurant followed by a return to the Marriott at 1600. Cost per person, not including the optional lunch, will be $20.

Johnson Space Center and W5RRR JSC ARC

On Monday there will be a tour of the NASA Johnson Space Center. The tour will include the Sonny Carter Neutral Buoyancy Lab and the Building 9 Training facility containing high fidelity full scale mockups of the International Space Station modules as well as the Soyuz spacecraft. The ISS tour will include special emphasis on the amateur radio stations on the ISS. The tour will also include the Building 30 historic mission control room as well as the current International Space Station control room, and s a visit to the JSC ARC station W5RRR. Transportation will depart the Marriott at 0800. On the return trip transportation will stop at Houston Hobby airport at 1415 before returning to the hotel. Cost per person will be $30.

Details, registration and up to date information may be found on WWW.AMSAT.ORG

[ANS thanks the AMSAT Office for the above information]

CEPT Considers Use of 5830-5850 MHz Satellite Band

The CEPT SE24 Short Range Devices meeting M72 took place in Vienna on August 26-27, 2013.

The meeting discussed the use of the frequency bands 5350-5470 MHz and 5725-5925 MHz ('WAS/RLAN extension bands') for wireless access systems including radio local area networks (WAS/RLANs).

Any use of Amateur Satellite Service downlink band of 5830-5850 MHz for this purpose would inevitably raise the noise floor making the weak satellite signals even harder to receive.

Links to the CEPT documents are posted on the AMSAT-UK web page:

http://tinyurl.com/ANS-251-CEPT

[ANS thanks AMSAT-UK for the above information]

ARISS News

+ A Successful contact was made between Mill Springs Academy, Alpharetta, GA, USA and Astronaut Christopher J. Cassidy, KF5KDR, using callsign NA1SS. The contact began 2013-09-04 14:15 UTC and lasted about nine and a half minutes. Contact was direct via KK4OVR.The ARISS Mentor for the contact was K4SQC.

Mill Springs Academy is an accredited independent school with a college-prep program dedicated to the academic, physical and social growth of students who have not realized their full potential in a traditional classroom setting. Since 1981 we have been supporting student learning by raising expectations and developing self-motivation, while providing skills and values for life.

The population consists of average to above average, students in grades 1-12, with learning disabilities and/or Attention Deficit Disorder. Small classes and an individualized curriculum help them to capitalize on their strengths while learning coping strategies. Mill Springs offers a broad range of fine arts options, a variety of competitive sports, and an extended day program. In the summer months, summer school, summer camp and sport workshops are offered.

Our 85-acre campus is nestled in the beautiful rolling hills and pasture land of Alpharetta. We can be found on Twitter (@millspringsacad), Facebook and Pinterest or on our website: www.millsprings.org Our school motto is Success In School. Success In Life.

Joining in this ARISS Radio Contact were students and faculty from the Brandon Hall School. Brandon Hall is located in Dunwoody, another northern suburb of Atlanta. Brandon Hall's mission as a coeducational boarding and day school is to provide a challenging college preparatory experience immersed in technology. Also joining us were students from Crabapple Crossing Elementary, a nearby public school.

+ A Successful contact was made between Duluth Children's Museum, Duluth, MN, USA and Astronaut [ISSOP, CALLSIGN] using callsign NA1SS. The contact began 2013-09-07 15:03 UTC and lasted about nine and a half minutes. Contact was direct via W0GKP.

The Duluth Children's Museum is a place where children begin their lifelong exploration of an ever-expanding world. The mission of the Duluth Children's Museum is to spark children's curiosity. One of the first children's museums in the country, the Duluth Children's Museum opened in 1930 as a resource for teachers, schoolchildren and families to learn more about their world neighbors. The Duluth Children's Museum serves more than 80,000 children, caregivers and educators annually through its exhibition and education programs. The museum's primary constituency is children age three to eight and their families. The extended constituency is children birth to three and children eight to twelve and family members.

Upcoming ARISS contacts

+ S.A.M.T. (Scuola Arti Mestieri Trevano), Canobbio, Switzerland, direct via HB9OK Contact is a go for: Mon 2013-09-09 07:17:03 UTC

[ANS thanks ARISS, Charlie AJ9N, David, AA4KN for the above information]

Satellite Shorts From All Over

+ Clayton Started It!

Clayton W5PFG started it - on the AMSAT-BB. Poetry, Haiku actually, lamenting there not being HEOs. It seems this meme may have a life of its own. Catch the fun and submit your own verse - Haiku or not on the AMSAT-BB. So far this editor's favorite is by Doug Phelps' K9DLP

AM-SAT volunteers
Working to keep us in space
Thank you, job well done

(Source: AMSAT-BB)

+ Move away from the center of the passband

Drew KO4MA suggests moving away from the center of the passband while working the linear birds. Previous to SatPC32 being the ubiquitous way to operate the transponders, people tended to spread out much more on the linear sats. CW was generally in the lower third to maybe middle, and voice was often spread out over much more of the passband. Now...I love Sat PC32, and I like full Doppler tuning, but just because the program defaults to the middle of the passband doesn't mean everyone should operate within 10 KHz of there.

See http://tinyurl.com/ANS-251-LinearOps

Spread out and use the VFO! There's no reason to pile up like sardines in the middle. Maybe even (GASP) edit the doppler.sqf file to put you elsewhere in the passband to fine tune things at the start of the pass? Got a schedule, or operating from a rare grid? Let everyone know where to look (i.e. 25 khz up from the middle) and save yourself and others some QRM?

Erich, DK1TB, offers this tip, if you want SatPC32 to start off the center of the passband of an SSB/CW satellite do the following: Run the program choose that satellite. Tune the radio to the start frequency you want - say 8 kHz above the center of the passband. Then click menu CAT > Change/Store Data File > RX/TX Freq. Data. From the next program start the program will start at the new downlink and uplink frequencies.

(Source: AMSAT-BB)

+ It seems we are having problems with the mailing of the July/August Journal.

It is indeed unfortunate to have the commendable efforts of the volunteer contributors and editorial staff to the AMSAT Journal be undone by problems at a PAID contractor.

If you have not received your 2013 July/August AMSAT Journal via the

postal mail please let the AMSAT office know via e-mail at
martha(a)amsat.org.

Source: Joanne K9JKM

+ Wouter, PA3WEG, has kindly created a unique video that shows the correct process for inserting three 1U CubeSats into their 3U ISIPOD. This is now available here:

http://www.youtube.com/watch?feature=player_embedded&v=3xT3SDlFUOg

Source: Graham Shirbille via AMSAT-BB

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, KC8YLD
kc8yld at amsat dot org